

Claims

What is claimed is:

1. A system for ensuring driver safety in a vehicle, said system comprising:

an arrangement for communicating with a plurality of systems impacting driver

5 safety;

said communicating arrangement being adapted to receive, from the plurality of systems impacting driver safety, information on current conditions relevant to driver safety;

an arrangement for evaluating whether driver safety is at risk, based on

10 information received by said communicating arrangement; and

an arrangement for performing operations to ensure driver safety, responsive to said evaluating arrangement.

2. The system according to Claim 1, wherein said evaluating arrangement is adapted to evaluate at least one of:

15 potential risk factors external to the driver; and

a current workload being borne by the driver.

3. The system according to Claim 1, wherein said arrangement for performing operations is adapted to perform at least one of:

communicating risk factors related to the vehicle to locations external to the
5 vehicle;

minimizing driver distraction;

recording and storing over time data behavioral and environmental data related to
at least one of: the vehicle and one or more drivers associated with the vehicle.

4. The system according to Claim 1, wherein said communicating arrangement is
10 adapted to communicate with at least one of: systems internal to the vehicle and systems external to the vehicle.

5. The system according to Claim 4, wherein said communicating arrangement is adapted to communicate with systems associated with at least one other vehicle.

6. The system according to Claim 1, wherein said system for ensuring driver
15 safety comprises at least one of:

a computer system physically associated with the vehicle;

a computer system associated with a server external to the vehicle.

7. The system according to Claim 1, wherein said communicating arrangement is adapted to communicate with at least one of the following systems impacting driver

5 safety:

an arrangement for assessing the position of the vehicle;

an arrangement for assessing the position of one or more other vehicles;

one or more driver safety management systems external to the vehicle;

at least one arrangement for assessing a driver's state;

10 at least one arrangement for assessing the state of a driver in another vehicle;

at least one arrangement for assessing a driver's behavior;

at least one arrangement for assessing the behavior of a driver in another vehicle;

at least one arrangement for assessing a driver's interactions with the vehicle;

at least one arrangement for assessing the interactions of other drivers with other vehicles another vehicle;

at least one arrangement with which the driver normally interfaces;

profile data relating to the driver;

5 profile data relating to a driver with a similar driving history or similar driving habits;

profile data relating to a driver in another vehicle;

at least one arrangement for assessing vehicle workload; and

at least one arrangement assessing the workload of one or more other vehicles.

10 8. The system according to Claim 7, wherein said at least one arrangement for assessing a driver's state comprises at least one arrangement for assessing driver biometrics.

 9. The system according to Claim 1, wherein said communicating arrangement is adapted to assess input from a workload representational surface which conveys an
15 aggregate workload borne by both the driver and the vehicle.

10. The system according to Claim 1, wherein said arrangement for performing operations is adapted to perform at least one of:

suggesting specific actions to a driver;

warning a driver;

5 communicating information relating to driver safety to an external location; and
providing sensory stimulation to a driver.

11. The system according to Claim 8, wherein said arrangement for performing operations is responsive to direction from one or more individuals at one or more locations external to the vehicle.

10 12. A system for ensuring driver safety in a plurality of vehicles, said system comprising:

an arrangement in each vehicle for communicating with a plurality of systems impacting the safety of drivers in the plurality of vehicles;

said communicating arrangements being adapted to receive, from the plurality of
15 systems impacting driver safety, information on current conditions relevant to driver safety;

an arrangement for evaluating whether the safety of one or more drivers is at risk,
based on information received by said communicating arrangements; and

an arrangement for performing operations to ensure driver safety, responsive to
said evaluating arrangement.

5 13. A method of ensuring driver safety in a vehicle, said method comprising the
steps of:

providing an arrangement for communicating with a plurality of systems
impacting driver safety;

with the communicating arrangement, receiving, from the plurality of systems
10 impacting driver safety, information on current conditions relevant to driver safety;

evaluating whether driver safety is at risk, based on information received by the
communicating arrangement; and

performing operations to ensure driver safety, responsive to the evaluating
arrangement.

15 14. The method according to Claim 13, wherein said evaluating step comprises
evaluating at least one of:

potential risk factors external to the driver; and

a current workload being borne by the driver.

15. The method according to Claim 13, wherein said step of performing operations comprising at least one of:

5 communicating risk factors related to the vehicle to locations external to the vehicle;

minimizing driver distraction;

recording and storing over time data behavioral and environmental data related to at least one of: the vehicle and one or more drivers associated with the vehicle.

10 16. The method according to Claim 13, wherein the communicating arrangement is adapted to communicate with at least one of: systems internal to the vehicle and systems external to the vehicle.

17. The method according to Claim 16, wherein the communicating arrangement is adapted to communicate with systems associated with at least one other vehicle.

15 18. The method according to Claim 13, wherein said step of ensuring driver safety comprises providing at least one of:

a computer system physically associated with the vehicle;

a computer system associated with a server external to the vehicle.

19. The method according to Claim 13, wherein the communicating arrangement is adapted to communicate with at least one of the following systems impacting driver

5 safety:

an arrangement for assessing the position of the vehicle;

an arrangement for assessing the position of one or more other vehicles;

one or more driver safety management systems external to the vehicle;

at least one arrangement for assessing a driver's state;

10 at least one arrangement for assessing the state of a driver in another vehicle;

at least one arrangement for assessing a driver's behavior;

at least one arrangement for assessing the behavior of a driver in another vehicle;

at least one arrangement for assessing a driver's interactions with the vehicle;

at least one arrangement for assessing the interactions of other drivers with other vehicles another vehicle;

at least one arrangement with which the driver normally interfaces;

profile data relating to the driver;

5 profile data relating to a driver with a similar driving history or similar driving habits;

profile data relating to a driver in another vehicle;

at least one arrangement for assessing vehicle workload; and

at least one arrangement assessing the workload of one or more other vehicles.

10 20. The method according to Claim 19, wherein the at least one arrangement for assessing a driver's state comprises at least one arrangement for assessing driver biometrics.

21. The method according to Claim 13, wherein the communicating arrangement is adapted to assess input from a workload representational surface which conveys an
15 aggregate workload borne by both the driver and the vehicle.

22. The method according to Claim 13, wherein said step of performing operations comprises performing at least one of:

suggesting specific actions to a driver;

warning a driver;

5 communicating information relating to driver safety to an external location; and
providing sensory stimulation to a driver.

23. The method according to Claim 20, wherein said step of performing operations is responsive to direction from one or more individuals at one or more locations external to the vehicle.

10 24. A method of ensuring driver safety in a plurality of vehicles, said method comprising the steps of:

providing an arrangement in each vehicle for communicating with a plurality of systems impacting the safety of drivers in the plurality of vehicles;

with the communicating arrangements, receiving, from the plurality of systems
15 impacting driver safety, information on current conditions relevant to driver safety;

evaluating whether the safety of one or more drivers is at risk, based on
information received by the communicating arrangements; and

performing operations to ensure driver safety, responsive to the evaluating
arrangement.

- 5 25. A program storage device readable by machine, tangibly embodying a
program of instructions executable by the machine to perform method steps ensuring
driver safety in a vehicle, said method comprising the steps of:

providing an arrangement for communicating with a plurality of systems
impacting driver safety;

- 10 with the communicating arrangement, receiving, from the plurality of systems
impacting driver safety, information on current conditions relevant to driver safety;

evaluating whether driver safety is at risk, based on information received by the
communicating arrangement; and

- 15 performing operations to ensure driver safety, responsive to the evaluating
arrangement.

26. A program storage device readable by machine, tangibly embodying a program of instructions executable by the machine to perform method steps for ensuring driver safety in a plurality of vehicles, said method comprising the steps of:

providing an arrangement in each vehicle for communicating with a plurality of
5 systems impacting the safety of drivers in the plurality of vehicles;

with the communicating arrangements, receiving, from the plurality of systems impacting driver safety, information on current conditions relevant to driver safety;

evaluating whether the safety of one or more drivers is at risk, based on information received by the communicating arrangements; and

10 performing operations to ensure driver safety, responsive to the evaluating arrangement.